

*Supplemental*  
**Notice of Allowability**

Application No.

09/862,484

Examiner

Leonid Shapiro

Applicant(s)

PAI ET AL.

Art Unit

2629

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Interview Summary on 01/30/07.
2. ☒ The allowed claim(s) is/are 1-2,6-7, renumbered as 1-4.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413)  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
**RICHARD HJERPE**  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600

***Examiner's Amendment***

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Claim 1: on Line 2, following the word module insert the following: --- to achieve real time driving ---.

Claim 6: on Line 2, following the word module insert the following: --- to achieve real time driving ---.

Authorization for this examiner's amendment was given in a telephone interview with Attorney Joe McKinney Muncy on 11.16.05.

***Allowable Subject Matter***

2. Claims 1-2, 6-7 allowed.

3. The following is an examiner's statement of reasons for allowance:

None of the cited references teaches or suggests a method of processing signals of a timing controller of a liquid crystal display module to achieve real time driving that comprises steps of:

**(a) receiving a vertical synchronizing signal;**

**(b) receiving a data enable signal DE which has a vertical blank period;**

(c) generating a gate clock signal CPV which has a plurality of gate clock cycles C1-Cn;

(d) after a rising edge or a falling edge of the vertical synchronizing signal, generating a plurality of gate-on enable signals OE simultaneously according to the plurality of gate clock cycles C1-Cn of the gate clock signal CPV;

(e) after a rising edge or a falling edge of the vertical synchronizing signal, generating start vertical signals STV before the end of the vertical blank period VB and after at least a gate clock cycle C1 during the vertical blank period VB wherein the start vertical signals STV includes a first start vertical signal STV1 to determine a start scan location of a frame and a second start vertical signal STV2 to offset flicker and display brightness of the liquid display;  
and

(f) after generating the start vertical signals STV, pausing output of CPV, STV1 and OE until the end of the vertical blank period VB. so as to process control signals in real time so that real time driving is achieved., as disclosed in claim 1. The closest art (APA, Herman and Taguchi) disclose a timing controller of a liquid crystal display module, either singularly or in combination fail to anticipate suggest these limitations obvious.

None of the cited references teaches or suggests a method of processing signals of a timing controller of a liquid crystal display module to achieve real time driving that comprises steps of:

(a) receiving a data enable signal DE which has a vertical blank period;

(b) decoding the data enable signal DE to generate a vertical synchronizing signal;

(c) generating a gate clock signal CPV which has a plurality of gate clock cycles C1-Cn;

(d) after a rising edge or a falling edge of the vertical synchronizing signal, generating a plurality of gate-on enable signals OE simultaneously according to the plurality of gate clock cycles C1-Cn of the gate clock signal CPV;

(e) after a rising edge or a falling edge of the vertical synchronizing signal, generating start vertical signals STV before the end of the vertical blank period VB and after at least a gate clock cycle C1 during the vertical blank period VB wherein the start vertical signals STV includes a first start vertical signal STV1 to determine a start scan location of a frame and a second start vertical signal STV2 to offset flicker and display brightness of the liquid display;  
and

(f) after generating the start vertical signals STV, pausing output of CPV, STV1 and OE until the end of the vertical blank period VB. so as to process control signals in real time so that real time driving is achieved., as disclosed in claim 6. The closest art (APA, Herman and Taguchi) disclose a timing controller of a liquid crystal display module, either singularly or in combination fail to anticipate suggest these limitations obvious.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Telephone Inquire***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 571-272-7683. The examiner can normally be reached on 8 a.m. to 5 p.m..


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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